

Seminar

Functional organic materials for photonic circuit applications via Mechanophotonics technique

Avulu Vinod Kumar

Weizmann Institute of Sciences, Israel

The upcoming photonic technologies rely on light-driven photonic circuits to replace electronic circuits. The preferred choice of materials for photonic circuits over the past few decades has been Si or Si-based materials. However, recently, a new technology enabled the fabrication of organic materials-based photonic circuits via the atomic force microscopy cantilever tip-based *mechanophotonics* technique. This technique paved the path for reconfigurable photonic integrated circuits from flexible organic crystals. Here, the emphasis will be on how various photonic components like optical waveguides (FL or Phosphorescent), ring resonators, directional couplers, optical circuits, etc., can be constructed from flexible organic crystals via mechanophotonics technique. Further, the versatility of functional organic materials (stimuli-responsive crystals) for photonic applications is also realised, including the fabrication of artificial neural network-type architectures.

Tuesday, May 27th 2025

11:30 Hrs (Tea / Coffee 11:15 Hrs)

Auditorium, TIFRH